

## ABSTRACT OF THE DISCLOSURE

Systems, methods, and products are described for synthesizing probe arrays of polymers. A mask is used that includes reticle areas, each of which includes a number of reticles associated with a same synthesis area on a substrate. A method includes (a) aligning 5 the mask with respect to the substrate so that a first reticle of a first reticle area is aligned with a first synthesis area and so that a second reticle of the first reticle area is aligned with a first discard area on the substrate; (b) coupling monomers on the first synthesis area at locations determined by the first reticle; (c) re-aligning the mask with respect to the substrate so that the second reticle is aligned with the first synthesis area; and (d) coupling monomers on the first 10 synthesis area at locations determined by the second reticle. The monomers may be, for example, nucleotides, amino acids or saccharides.

100 90 80 70 60 50 40 30 20 10